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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/710,894 | 08/11/2004 | Kuen-Suey Hou | MTKP0123USA | 4893 |
| 27765 | 7590 | 03/24/2006 | EXAMINER | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116 | | | ALMO, KHAREEM E | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2816 | |
| DATE MAILED: 03/24/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/710,894 | HOU ET AL. | |
| | Examiner | Art Unit | |
| | Khareem E. Almo | 2816 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8/11/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 2/16/2006 has been received and entered in the case.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-20 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,147,530, issued to Nogawa.

As per claim 1, Nogawa discloses a phase locked loop PLL (figure 2) generating a phase locked signal (the OF signal) and adjusting a frequency of the phase locked signal according to an incoming signal (this is the function of any PLL, the incoming signal is the ID signal), the PLL comprising:

an oscillator (VCO 5) for generating the phased locked signal (the OF signal);
and

a frequency detection module (frequency comparator 2) electrically coupled to the oscillator (the frequency comparator 2 is coupled to the VCO 5 through the divider 6) for detecting two regular patterns in the incoming signal (figure 6 is the detailed of the frequency comparator, figure 7 explains the operation, the two regular patterns are sync

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patterns of the EFM modulation signal, column 12, lines 48-65), calculating a number of periods of the phase locked signal corresponding to a distance between the two regular patterns (column 14, lines 31-41), and controlling the oscillator to adjust the frequency of the phase locked loop signal according to the number of periods (the frequency comparator 2 outputs FCUP and FCDN signals to control the VCO 5, column 15, lines 1-29).

As per claim 2, Nogawa further discloses the frequency detection module comprises:

- a pattern detector (frame generating counter 25) for detecting the two regular patterns (the sync patterns of the EFM modulation signal, column 12, lines 48-65) in the incoming signal;

- a counter (counter 212 and peak and bottom hold units 22 and 23) electrically coupled to the pattern detector for calculating the number of periods of the phase locked signal corresponding to the distance between the two regular patterns; and

- a comparator (frequency error output unit 24) electrically coupled to the counter for comparing the number of periods with a predetermined value (SYNC pattern SY, column 15, lines 11 and 27) to generate A control signal (FCUP and FCDD, and using the control signal to control the oscillator to adjust the frequency of the phase locked signal.

As per claim 3, the recited limitation is described in column 15, lines 1-29.

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As per claim 4, the recited control interface reads on the charge pump circuit 8 shown in figure 2 which provides the signal FVP for controlling the frequency of the OF signal.

As per claim 5, the recited limitations are described in column 12, line 48, and lines 60-64.

As per claim 6, Nogawa's oscillator is a voltage controlled oscillator as its name suggested, i.e., VCO.

As per claim 7, this claim is merely method to operate the PLL having the structure noted in claim 1. Since Nogawa teaches the circuit, the method to operate is inherently disclosed.

As per claims 8-10, these claims are rejected for the same reasons noted in claims 2-3 and 5, respectively.

Allowable Subject Matter

3. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 11, the prior art of record fails to suggest or disclose a Phase Locked Loop comprising a frequency detector in combination with a multiplexor with the functionality as recited in the claim.

Response to Arguments

4. With regard to the applicant's argument "since the frame generating counter 25 of the frequency comparator only calculates one frame, and each frame contains only one SYNC pattern at the head of the frame, the frequency comparator 2 cannot detect two regular patterns (being the SYNC signals) in two different frames of the incoming signal", the examiner disagrees. The recitation of a "frame generating 25 temporarily calculates one frame" has to be taken in the context as an example of an instance of one of the frames in a series. The two patterns are the SYNC patterns in two different frames (one after the other). The fact that "the clock is superimposed on a data signal train", (column 12 lines 47-51 describing an EFM signal) shows there are two regular patterns in the incoming signal, since the SYNC pattern is a segment of a train of the incoming signal. Since each frame must incorporate the SYNC signal the regular pattern SYNC signals are also in two different frames as indicated in claim 1.

With regard to the applicant's argument "mere detection of subsequent edges cannot be considered detection a regularly repeating pattern", the examiner wishes to explain that the fact that the edges are detected is not what is considered the detection of a regularly repeating pattern. The fact that the edges are in part the edges of the SYNC pattern is the detection, which is inside the EFM signal, show that it is a regularly repeating pattern, which is detected. Furthermore Nogawa explicitly explains that, "by using the frame cycle signal, one frame has one SYNC pattern without fail, which guarantees that SYNC pattern can be detected." (See column 13 lines 65-67)

With regard to the applicants argument Nogawa "does not measure the number of periods of the phase locked signal between the two regular SYNC patterns, rather, it measures the number of periods between any rising or falling edge from the data signal train ID ", the examiner disagrees. Because a SYNC signal is in each of the EFM frames the examiner maintains the SYNC signal is a regular SYNC pattern.

With regard to the applicants argument "the term "number of periods" refers specifically to the "number of periods of the phase locked signal corresponding to the distance between two regular patterns" and "the invention of Nogawa does not calculate the number of periods between two regular patterns", the examiner disagrees. Because a SYNC signal is in each of the EFM frames the examiner maintains the SYNC signal is a regular SYNC pattern.

With regard to claims 7-10 the applicants argument "the step (b) (detecting two regular patterns in the incoming signal) of Claim 7 is not taught by Nogawa", the examiner disagrees in view of the above argument.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khareem E. Almo whose telephone number is (571) 272-5524. The examiner can normally be reached on Mon-Fri (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KEA
3/20/2006


QUANTRA
PRIMARY EXAMINER